

SECTION E (2 X 5 = 10 Marks)

36.

Surya is a manager working in a recruitment agency. He needs to manage the records of various candidates. For this, he wants the following information of each candidate to be stored:

- Candidate_ID – integer
- Candidate_Name – string
- Designation – string
- Experience – float

You, as a programmer of the company, have been assigned to do this job for Surya

(I) Write a function to input the data of a candidate and append it in a binary file.

(II) Write a function to update the data of candidates whose experience is more than 10 years and change their designation to "Senior Manager".

(III) Write a function to read the data from the binary file and display the data of all those candidates who are not "Senior Manager".

```
import pickle
```

```
def input_candidates():
```

```
    candidates = []
```

```
    n = int(input("Enter the number of candidates you want to add: "))
```

```
    for i in range(n):
```

```
        candidate_id = int(input("Enter Candidate ID: "))
```

```
        candidate_name = input("Enter Candidate Name: ")
```

```
        designation = input("Enter Designation: ")
```

```
        experience = float(input("Enter Experience (in years): "))
```

```
    candidates.append([candidate_id, candidate_name, designation, experience])
```

```
    return candidates
```

```
candidates_list = input_candidates()
```

```
def append_candidate_data(candidates):
```

```
    with open('candidates.bin', 'ab') as file:
```

```
for candidate in candidates:

pickle.dump(candidate, file)

print("Candidate data appended successfully.")

append_candidate_data(candidates_list)
```

```
(II)
import pickle
def update_senior_manager():
    updated_candidates = []
    with open('candidates.bin', 'rb') as file:
        while True:
            candidate = pickle.load(file)
            if candidate[3] > 10:
                candidate[2] = 'Senior Manager'
                updated_candidates.append(candidate)
            with open('candidates.bin', 'wb') as file:
                for candidate in updated_candidates: (5)

pickle.dump(candidate, file)
print("Candidates updated to Senior Manager where applicable.")
update_senior_manager()
```

```
(III)
import pickle

def display_non_senior_managers():

    with open('candidates.bin', 'rb') as file:

        while True:
            candidate = pickle.load(file)

            if candidate[2] != 'Senior Manager':

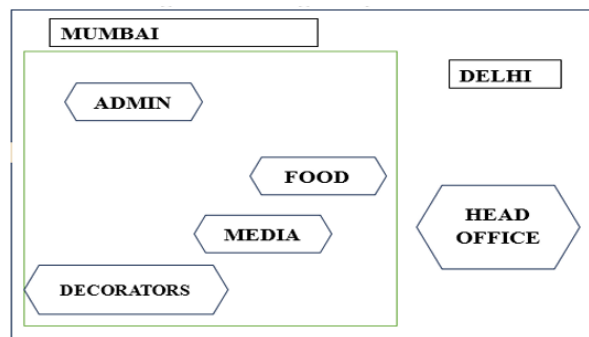
                print(f"Candidate ID: {candidate[0]}")
                print(f"Candidate Name: {candidate[1]}")
                print(f"Designation: {candidate[2]}")
```

```
print(f"Experience: {candidate[3]}")
```

```
display_non_senior_managers()
```

37.

Event Horizon Enterprises is an event planning organization. It is planning to set up its India campus in Mumbai with its head office in Delhi. The Mumbai campus will have four blocks/buildings - ADMIN, FOOD, MEDIA, DECORATORS. You, as a network expert, need to suggest the best network-related solutions for them to resolve the issues/problems mentioned in points (I) to (V), keeping in mind the distances between various blocks/buildings and other given parameters.



Block to Block distances (in Mtrs.)

From	To	Distance
ADMIN	FOOD	42 m
ADMIN	MEDIA	96 m
ADMIN	DECORATORS	48 m
FOOD	MEDIA	58 m
FOOD	DECORATORS	46 m
MEDIA	DECORATORS	42 m

Distance of Delhi Head Office from Mumbai Campus = 1500 km

Number of computers in each of the blocks/Center is as follows:

ADMIN	30
FOOD	18
MEDIA	25
DECORATORS	20
DELHI HEAD OFFICE	18

(I) Suggest the most appropriate location of the server inside the MUMBAI campus. Justify your choice.

ADMIN, as it has maximum number of computers.

(II) Which hardware device will you suggest to connect all the computers within each building? **Switch**

(III) Draw the cable layout to efficiently connect various buildings within the MUMBAI campus. Which cable would you suggest for the most efficient data transfer over the network? **Optical Fiber**

(IV) Is there a requirement of a repeater in the given cable layout? Why/ Why not?
Yes/No (Yes to increase signal strength) (No, distance is less than 100m)

(V) A) What would be your recommendation for enabling live visual communication between the Admin Office at the Mumbai campus and the DELHI Head Office from the following options:

a) Video Conferencing

b) Email

c) Telephony

d) Instant Messaging

OR

B) What type of network (PAN, **LAN**, MAN, or WAN) will be set up among the computers connected in the MUMBAI campus?